## CLAIMS

Please amend Claims 1 and 18 as follows:

1. (Currently Amended) A resource assignment method comprising:

establishing a resource model;

acquiring an application model, wherein said application model describes a plurality of application functional components and includes information about which application functional components communicate with each other; and

utilizing a generic mapping process to map said application model onto said resource model, wherein said generic mapping process is directed to increasing the optimization of resource utilization through appropriate assignment of resources to an application with respect to desired objectives and wherein said generic mapping process is enabled to map a first application model onto a first resource model and a second application model onto a second resource model.

2. (Previously Presented) The resource assignment method of Claim 1 further comprising:

obtaining a set of parameters associated with topology and performance characteristics of resources in a data center and;

acquiring information about resource requirements of an application.

3. (Previously Presented) The resource assignment method of Claim 2 wherein said parameters that characterize the topology and resources of said data center include:

a number of edge switches, a number of rack switches, a number of server nodes, and connectivity matrices between different layers; and

specification of the bandwidth limits of the incoming and outgoing links at various layers of the network.

4. (Previously Presented) The resource assignment method of Claim 2 wherein said information about resource requirements of an application include:

a number of application functional components;

a network traffic requirements between said application functional components; and

upper and lower bounds on server attributes which are required for said server to host said application functional component.

5. (Original) The resource assignment method of Claim 1 wherein said mapping process determines which server nodes are assigned to an application functional component and is captured in an assignment decision variable.

6. (Original) The resource assignment method of Claim 5 wherein said assignment decision variable is optimized in accordance with a desired objective including meeting application requirements.

7. (Original) The resource assignment method of Claim 5 wherein said desired objective further includes minimizing communication delays.

8. (Original) The resource assignment method of Claim 5 wherein a layered partitioning and pruning (LPP) process is utilized to find an application resource assignment optimal solution.

Claims 9. - 17. (Canceled)

18. (Currently Amended) A resource allocation system comprising:

a means for gathering information associated with available networked resources;

a means for extracting information associated with application functional components; and

a means for assigning application functional components to said available networked resources in accordance with a resource allocation variable, wherein said means for assigning uses information about which application functional components communicate with each other as a part of assigning said application functional components to said available networked resources and wherein said means for assigning enables generically assigning first information associated with a first set of available networked resources with first information associated with a first set of application functional components and generically assigning second information associated with a second set of available networked resources with second information associated with a second set of application functional components.

19. (Original) A resource allocation system of Claim 18 wherein said means for assigning application functional components to said available networked resources

allocates said available networked resources by maximizing said available networked resources identified in said resource allocation variable with respect to application constraints and desired objectives.

20. (Original) The resource allocation system of claim 18 wherein said information associated with said available networked resources includes configuration and performance characteristics of said available networked resources.

21. (Previously Presented) The resource allocation system of claim 20 wherein said information associated with said application functional components includes organization and networked resource requirements of said application functional components.

22. (Original) The resource allocation system of claim 21 wherein said means for assigning application functional components to said available networked resources includes a means for simplifying said assignment analysis by identifying infeasible networked resources and partitioning said available networked resources.